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ABSTRACT

Over 35 educational research projects in Scotland are briefly described in this survey report which is an update of the research projects being performed in Scotland during 1970-72. A variety of research projects in general subject areas such as the teaching of reading, science, and English and foreign language are described. Other research projects examine such areas as assessment, handicapped, higher education, and vocational education. Among projects, there is very little overlap in areas researched. Two projects which illustrate the wide range of investigations are "A Logical Analysis of the Role of Hostel Wardens" and "Courses for Craftsmen." Each project description is presented in outline format and includes: project name; organization or sponsoring institution; principal research; aim and objectives; methods of research; number of workers; time schedule; and financial source. A list of principal researchers, organizations, and descriptors concludes the document. (JR)

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EDUCATIONAL RESEARCH IN THE UNITED KINGDOM

SCOTLAND 1970 - 1972

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Survey prepared by
The Scottish Council for Research in Education
16 Moray Place, Edinburgh EH3 6DR

PROJECT

A sociological analysis of the role of hostel wardens

RESEARCH ORGANISATION/INSTITUTE

Aberdeen College of Education, Hilton Place, Aberdeen AB9 1FA

PRINCIPAL RESEARCHER

Dr. R.N. Jackson

AIM

- To examine on a clearly defined basis the nature and extent of hostel provisions in Scotland in order to discern national trends, regional and local differences

- To gather biographical data on all hostel wardens in order to ascertain the general characteristics of the hostel warden and to provide biographical variables for the role and institutional analysis

METHODS

Questionnaires; analysis; interviews

NUMBER OF WORKERS

Two

TIME SCHEDULE

Starting date : October 1970

Completion date : October 1972

SOURCE OF FINANCE

Scottish Education Department

PROJECT

Comprehensive schools and the ambitions of school leavers

RESEARCH ORGANISATION/INSTITUTE

Aberdeen College of Education, Hilton Place, Aberdeen AB9 1FA

PRINCIPAL RESEARCHER

G. S. Osborne

AIM

- To assist headteachers of comprehensive schools by analysing the relationship between the type of organisational decisions which they will be called upon to make as a result of introducing comprehensive education

- To ascertain the ambitions of the pupils and the post-school careers chosen

METHOD

General survey of all schools in north-east Scotland related to statistics already available

NUMBER OF WORKERS

One researcher, two other staff

TIME SCHEDULE

Starting date : September 1969

Completion date : October 1972

SOURCE OF FINANCE

Scottish Education Department

PROJECT

Language project: multi-media kits for primary schools

RESEARCH ORGANISATION/INSTITUTE

Craigie College of Education, Ayr

PRINCIPAL RESEARCHER

G.W. Riddell

AIM

To explore the relationship between children's experience, especially school experience, and the growth in their power of using language

This is to be attempted by looking closely at a primary school in order to describe the school as it is and the social background of its children and to record the personal and language attainments of the children

METHODS

Interviews; questionnaires

RESULTS

Production of complete learning packages for language work using print, audio-tapes and slides

NUMBER OF WORKERS

One lecturer; one researcher plus part-time secretarial help

TIME SCHEDULE

Starting date : 1969

Completion date : 1973

SOURCE OF FINANCE

Scottish Education Department

PROJECT

Action research on educational priority areas

RESEARCH ORGANISATION/INSTITUTE

Dundee College of Education, Park Place, Dundee

PRINCIPAL RESEARCHERS

Dr. T.R. Lee, J. Watt (Miss)

BIBLIOGRAPHIC REFERENCES

Halsey, A.H. (ed): Educational Priority Vol. 1 Problems and policies. London, HMSO, 1972

AIM

The educational priority areas research programme was launched by the Social Science Research Council and the Scottish Education Department in September 1968, following publication of the Plowden Report (Department of Education and Science: Children and their primary schools. London, HMSO, 1967). The objectives are to evaluate a policy of positive discrimination on behalf of children in specific areas or schools, to examine the educational and social needs of children living in an educational priority area and to encourage parents to be involved in the education of their children.

METHODS

Tests; information collected about home background; parental interviews

NUMBER OF WORKERS

Six

TIME SCHEDULE

Starting date : September 1968

Completion date : September 1972

SOURCE OF FINANCE

Scottish Education Department; Social Science Research Council

PROJECT

Non-intellectual factors in secondary school success

RESEARCH ORGANISATION/INSTITUTE

Dundee College of Education, Park Place, Dundee

PRINCIPAL RESEARCHERS

Luis Maciver, Wyllie Fyfe

AIM

To study the relationship of various non-intellectual factors with Ordinary Grade success

METHODS

5,200 secondary school pupils
Questionnaires

RESULTS

- Great importance of parental and pupil aspiration, even when social class and ability are allowed for
- Relative playing down of social class as a determining factor
- Emergence of pupils who are in the "unexpected success" and "unexpected failure" categories

NUMBER OF WORKERS

Two researchers; one research assistant; approximately 100 teachers

TIME SCHEDULE

The project has been completed

SOURCE OF FINANCE

Scottish Council for Research in Education; Scottish Education Department

PROJECT

Teaching of reading

RESEARCH ORGANISATION/INSTITUTE

Dundee College of Education, Park Place, Dundee

PRINCIPAL RESEARCHERS

A. Milne, T.W. Fyfe

BIBLIOGRAPHIC REFERENCES

Milne, A. & Fyfe, T.W.: Reading - a question of media, Dundee College of Education publication

AIM

To conduct a longitudinal study of methods of teaching reading in matched groups with primary school children to determine the effects of the Initial Teaching Alphabet (ITA)

METHODS

Matched groups of classes; pre- and post-testing; long courses of reading

MAIN FINDINGS

No measurable improvement with ITA over a three-year period

NUMBER OF WORKERS

Two full-time plus thirty teachers

TIME SCHEDULE

Starting date : 1964

Completion date : 1972

SOURCE OF FINANCE

Scottish Education Department

PROJECT

Studies of formal and informal assessment procedures in secondary school classes

RESEARCH ORGANISATION/INSTITUTE

University of Dundee, Department of Education, Dundee DD1 4HN

PRINCIPAL RESEARCHER

A.T. Morrison

AIM

To investigate the practices and characteristics of teachers in seeking, interpreting and using information they get concerning their pupils during the course of classroom activities. The subjects will be teachers and their pupils mainly in the first two years of secondary schooling.

METHODS

Investigations; reports produced

NUMBER OF WORKERS

One lecturer; one part-time secretary

TIME SCHEDULE

Starting date : October 1970

Completion date : October 1973

SOURCE OF FINANCE

Scottish Education Department

PROJECT

Sociological study comparing educational and career patterns of Scottish and English graduates

RESEARCH ORGANISATION/INSTITUTE

The Scottish Council for Research in Education, 16 Moray Place, Edinburgh EH3 6DR

PRINCIPAL RESEARCHER

Professor R.K. Kelsall
University of Sheffield, Department of Sociological Studies, Higher Education Research Unit, Sheffield S10 2TN

AIM

This study owed its origins to the national survey of 1960 graduates, which was directed by Professor Kelsall. 870 men and 560 women who graduated from a British university in 1960 took a degree in Scotland. At the same time some 103 men and women whose permanent homes were in Scotland graduated elsewhere in Britain. The enquiry centred on this Scottish component of the national sample.

METHODS

The research fell into three main sections:

- A comparison of the social, educational and occupational characteristics of men and women who graduated from Scottish and English universities in 1960;
- An investigation of the characteristics of graduates schoolteaching in Scotland and of those doing other types of work there;
- The preparation of data pertaining to 1960 graduates which were to be used for a comparison with material collected during the course of the Scottish Council for Research in Education's "Assessment for Higher Education" project.

The national sample of 1960 graduates comprised every woman and every other man who took a first degree in 1960 in faculties other than medicine, dentistry and veterinary science at British universities. Of these 870 men and 560 women had taken a degree in Scotland, and a further 103 men and women whose permanent homes at the time of entry to university were in Scotland graduated elsewhere in Britain. These 1533 graduates were the subject of this particular investigation.

In October 1966 questionnaires were sent to all the graduates included in the sample. With the financial support of the Department of Education and Science and the Social Science Research Council the data were collected, and some preliminary analyses completed between 1965 and 1970. With the help of a grant from the Scottish Council for Research in Education a reanalysis of the data pertaining to Scottish graduates began in October 1971.

RESULTS

Among the main findings were that:

- the graduates of Scottish and English universities were similar in terms of social class and origins;

- the parents of the Scottish-educated sample were rather better placed with regard to further education than the parents of other graduates;
- most of the graduates were educated in state schools;
- the Scottish-educated graduates were more likely than their English-educated peers to have taken degrees in arts or applied sciences;
- women were more likely than men to have taken arts degrees and unclassified degrees;
- regardless of subject of degree graduates of Scottish universities were relatively more likely to have taken a postgraduate teaching qualification;
- on graduation 63% of women and 40% of men who graduated in Scotland took a first post in education as did 60% and 32% respectively of women and men who graduated elsewhere in Britain;
- there were important sex differences in employment patterns; women were mostly in teaching while men were involved in a variety of professional, administrative and research work;
- six years after graduation almost half the women were out of employment altogether;
- Scottish-educated men described their jobs less favourably than their counterparts who had taken degrees in England;
- women, on the whole, rated their work more adversely than men did, regardless of university grouping;
- of the 873 graduates who were resident in Scotland six years after graduation 634 had taken degrees in Scotland, while 239 had attended universities elsewhere in Britain;
- of the Scottish-educated group domiciled in Scotland most had studied at Glasgow or Edinburgh universities. The majority of the 'immigrant' group, who were living in Scotland after graduating elsewhere, had taken first degrees at Oxford or Cambridge. A large proportion (43%) of these 'immigrant' men had taken a doctorate after their first degree, while the largest single group of Scottish graduate men working in Scotland had taken post-graduate teaching diplomas;
- the graduate men who were working in Scotland after taking a degree elsewhere were, like their Scottish-graduated peers, heavily concentrated in education, but were relatively more likely to be in the university sector;
- of the 234 graduates teaching in Scottish schools in 1966 two-thirds were in secondary schools; most of the Scottish schoolteacher sample had taken a teaching qualification, which they felt was of direct relevance to their work;
- most of the teachers expected to remain in the profession and demonstrated a stability in career plans which was seen to have originated at least from the period of entry to university.

NUMBER OF WORKERS

Three

TIME SCHEDULE

Starting date : October 1971

Completion date : September 1972

SOURCE OF FINANCE

Scottish Council for Research in Education

PROJECT

Scottish 1947 survey: younger siblings follow-up

RESEARCH ORGANISATION/INSTITUTE

The Scottish Council for Research in Education, 16 Moray Place, Edinburgh EH3 6DR

PRINCIPAL RESEARCHER

James Maxwell (Queen Margaret College, Clerwood Terrace, Edinburgh EH12 8TS)

AIM

To study IQ differences of children in the same family in relation to educational and occupational progress

METHODS

Younger siblings of 1,208 eleven-year-olds randomly selected from the 1947 survey population; 1,554 cases recorded; response rate about 60%

Individual testing from 1947 to 1968, followed by questionnaire regarding education, employment and marriage

RESULTS

- Intra class correlation of the order of + 0.5 within families for IQ
- No evidence of difference of mean IQ by order of birth for constant size of family
- Conventional definition of social class by father's occupation of little predictive validity for IQ, education and employment on account of:
  - . variation of IQ within families
  - . association between social class and mean IQ

Implications: considerable doubt is cast on the effects of social class on differences of IQ and education. The sample was too small to reach firm conclusions.

NUMBER OF WORKERS

One research worker (part-time); one clerical assistant (part-time); various assistants for testing (1947-68)

TIME SCHEDULE

Starting date : October 1969

The project has been completed.

SOURCE OF FINANCE

Social Science Research Council
Facilities provided by the Scottish Council for Research in Education

PROJECT

Wastage in national certificate courses

RESEARCH ORGANISATION/INSTITUTE

The Scottish Council for Research in Education, 16 Moray Place, Edinburgh EH3 6DR

PRINCIPAL RESEARCHER

G. J. Pollock

AIM

The present failure rate in Ordinary National Certificate courses is approximately 50%. The aim of the project is:

- to throw light on some of the reasons for the extremely high failure rate by investigating the factors associated with success or failure in such courses;
- to compile profiles of the typical entrants to such courses in Scotland.

METHODS

A total of 1,210 students enrolled in five different courses have been followed up over a four-year period. The courses are biology, building, chemistry, electrical and mechanical engineering.

Data have been obtained on the aptitudes, attainments, vocational interests, personality characteristics, attitudes and aspirations of the sample. The main form of analysis has been by use of discriminant analysis and regression techniques.

RESULTS

It is clear from the analysis so far carried out that the first year of such courses is crucial as regards future success. Variables based on first year assessments are the best predictors of subsequent success. The importance of initial job choice in certain industries has also been established.

NUMBER OF WORKERS

One researcher; one technical assistant

TIME SCHEDULE

Starting date : August 1966

Probable completion date : June 1973

SOURCE OF FINANCE

Scottish Council for Research in Education

PROJECT

The International Project for the Evaluation of Educational Achievement (IEA)

RESEARCH ORGANISATION/INSTITUTE

The Scottish Council for Research in Education, 16 Moray Place, Edinburgh EH3 6DR

PRINCIPAL RESEARCHER

G. J. Pollock

AIM

To study in a systematic way how the educational outcomes in certain subject areas in different school systems are related to features of school organisation, curriculum practices, teacher characteristics, etc.

Scotland is participating in three subject areas: reading comprehension, science and French.

METHODS

Reading comprehension and science were tested in 1970 and French in 1971.

For reading comprehension and science three national random samples of pupils, aged 10, 14 and in the sixth year of secondary school respectively, were tested. Over 300 schools, 6,750 pupils and 3,350 teachers participated in this phase of the project.

For French two national random samples were tested, one of pupils aged 14 and the other of pupils in the fifth and sixth years of secondary school. Approximately 110 schools, 2,000 pupils and 700 teachers took part in this phase.

For each subject sets of objective-type tests have been prepared suitable for administration to 10-year-olds, 14-year-olds and pupils in their final years of secondary education. The final versions of these tests have been constructed only after much discussion (in which committees comprising Scottish teachers, inspectors and college of education lecturers have played an important part) and a considerable amount of pre-testing in each country. In addition to assessing the cognitive aspects of these subjects, information on the non-cognitive aspects, such as attitudes to learning, is being examined by means of attitude scales and questionnaires.

RESULTS

The international findings should be available in 1973. The Scottish National Report should be available in 1974.

NUMBER OF WORKERS

Two researchers; one and a half technical assistants

TIME SCHEDULE

Starting date : December 1969

Probable completion date : May 1974

SOURCE OF FINANCE

The international part of the costs is born by IEA. The national costs are born by the Scottish Council for Research in Education funds.

PROJECT

Assessment for higher education

RESEARCH ORGANISATION/INSTITUTE

The Scottish Council for Research in Education, 16 Moray Place, Edinburgh EH3 6DR

PRINCIPAL RESEARCHER

John L. Powell

BIBLIOGRAPHIC REFERENCES

Powell, John L.: Selection for University in Scotland. London, University of London Press, 1973 (Scottish Council for Research in Education: Publication 64).

AIM

To ascertain what measures or combination of measures best predict success at a Scottish university, college of education, or central institution

METHODS

The measures used include:

- performance in the Scottish Certificate of Education (SCE) examination (the principal measure currently used for selection for all types of institution);
- a scholastic aptitude test;
- headteachers' estimates of probable success in each type of institution;
- teachers' scaled estimates of attainment in the SCE examination.

Short questionnaires were completed by sample members while still at school.

The sample consisted of all Scottish pupils presented for the SCE examination at higher grade for the first time in 1962. The sample, which contained more than 98% of all those satisfying the criterion for inclusion, amounted to nearly 10,000 young people. More than 5,500 of these entered higher education in Scotland by 1965, and all these were followed up until their courses were completed or otherwise terminated. Data collection was completed in July 1970.

RESULTS

Results so far available relate only to entrants to universities. No evidence was found that a scholastic aptitude test would be a useful addition to currently used selective measures. Performance in the SCE examination was found to have the highest predictive value of any of the measures tested, but this predictive value achieved only very modest levels. It must be remembered, however, that the group tested - those actually admitted to university - were relatively homogeneous in ability and attainment, and that therefore correlations between predictors and success at university were unlikely to be high. Moreover, much of the failure that occurs is probably attributable to factors little related to ability. The relatively low level of correlation found between the measures of school attainment and success at university suggests that a raising of entrance requirements would do little to reduce wastage, and that a modest lowering of these standards would only slightly increase failure rates, given, in both cases, that pass standards at university remain constant.

NUMBER OF WORKERS

Variable, but for most of the time only one researcher has been engaged on the project. 1-2 clerical research assistants were employed throughout the period of data collection. Part-time technical and clerical assistance was available during the period of analysis.

TIME SCHEDULE

Starting date : mid 1961

Completion date : 1973

SOURCE OF FINANCE

Carnegie Trust for the Universities of Scotland; Social Science Research Council; Scottish Council for Research in Education

PROJECT

Courses for craftsmen

RESEARCH ORGANISATION/INSTITUTE

The Scottish Council for Research in Education, 16 Moray Place, Edinburgh EH3 6DR

PRINCIPAL RESEARCHER

A. D. Weir

BIBLIOGRAPHIC REFERENCES

Weir, A.D. : A day off work? Edinburgh, Scottish Council for Research in Education, 1971, 143 p.

: Craftsmen and their courses. Further Education, July 1972

: Apprentices dissatisfied with day-release. Times Educational Supplement (Scotland), 31 March 1972

: Problems of craft apprentices in further education. Times Educational Supplement (Scotland), 5 May 1972

: Who cares about the craft apprentice? Studies in Design Education and Craft, May 1972

AIM

To investigate what apprentices saw as the objectives and incentives of further education

METHODS

2,000 apprentices from five occupations from four technical colleges
Interviews, questionnaires, attitude scales

RESULTS

The main findings are that:

- favourable attitudes to further education emerge at about the age of 18;
- craft certificates are only an incentive where the industry recognises them;
- the course content has a greater effect on attitudes than the college atmosphere when apprentices have only one day a week at college.

The implications of these findings concern the best ages on which to concentrate further education, the type of certificate needed by industry, and the value of day-release in educating rather than training youth.

NUMBER OF WORKERS

One researcher

TIME SCHEDULE

Starting date : October 1967

Completion date : January 1971

SOURCE OF FINANCE

Scottish Council for Research in Education

PROJECT

Profiles of craft and technician apprentices

RESEARCH ORGANISATION/INSTITUTE

The Scottish Council for Research in Education, 16 Moray Place, Edinburgh EH3 6DR

PRINCIPAL RESEARCHER

A. D. Weir

AIM

To investigate the overlap in ability between entrants to City and Guilds craft and technician courses

METHODS

600 apprentices from six City and Guilds courses from 21 Scottish colleges
Test scores; course results

RESULTS

A considerable overlap in ability has already been observed, particularly in electrical courses, which implies an under-utilisation of available abilities.

NUMBER OF WORKERS

One researcher; one other assistant

TIME SCHEDULE

Starting date : December 1969

Completion date : January 1973

SOURCE OF FINANCE

Scottish Council for Research in Education

PROJECT

Case studies of education and training

RESEARCH ORGANISATION/INSTITUTE

The Scottish Council for Research in Education, 16 Moray Place, Edinburgh EH3 6DR

PRINCIPAL RESEARCHER

A. D. Weir

AIM

Hypothesis: that measures of attitudes, motivation and personality will be more satisfactory predictors of occupational success than measures of ability.

METHODS

1,200 applicants for employment in electrical or motor vehicle work in two areas of Scotland

Test scores; questionnaires; interviews; course results; skills; employer ratings; instructor ratings

NUMBER OF WORKERS

Two researchers; one other assistant

TIME SCHEDULE

Starting date : June 1972

Completion date : June 1976

SOURCE OF FINANCE

Scottish Council for Research in Education; South of Scotland Electricity Board; Lanarkshire Automobile Group Training Association

PROJECT

Pupils' interests and abilities

RESEARCH ORGANISATION/INSTITUTE

The Scottish Council for Research in Education, 16 Moray Place, Edinburgh EH3 6DR

PRINCIPAL RESEARCHERS

A. D. Weir, S. J. Closs

BIBLIOGRAPHIC REFERENCES

Closs, S. J.: Manual of the APU Occupational Interests Guide. London, ULP, 1969, 63 p.

AIM

To investigate the associations between ability, personality, and interest characteristics of school pupils and their further educational and occupational success and satisfaction

METHODS

2,500 pupils attending 70 Scottish secondary schools
Tests; scores; course results; questionnaires

NUMBER OF WORKERS

Two researchers; two other assistants

TIME SCHEDULE

Starting date : September 1970

Completion date : September 1975

SOURCE OF FINANCE

Scottish Council for Research in Education; University of Edinburgh; Department of Employment

PROJECT

Analytical models of education systems : a comparative study

RESEARCH ORGANISATION/INSTITUTE

University of Edinburgh, Department of Adult Education, Edinburgh EH8 9YL

PRINCIPAL RESEARCHER

Dr. J. Lowe

AIM

An analysis of selected aspects of Scottish educational institutions designed to construct models which may be used as the basis of comparison with institutions in the United States and the USSR

METHODS

Questionnaires; analysis of results

NUMBER OF WORKERS

One researcher; one lecturer in comparative education; one research associate

TIME SCHEDULE

Starting date : September 1971

Completion date : September 1974

SOURCE OF FINANCE

Scottish Education Department

PROJECT

The educational achievement of children with deviant speech development

RESEARCH ORGANISATION/INSTITUTE

University of Edinburgh, Department of Child Life and Health, Edinburgh EH8 9YL

PRINCIPAL RESEARCHER

Dr. T.T.S. Ingram

AIM

It has been shown that healthy children of average or superior intelligence, whose parents belong to social classes I and II (i.e. higher professional, and managerial and other professional) and who have retarded speech development, are slow to learn to read and spell. A test of articulatory development has been constructed and standardised and gives a reliable measure of the maturation of spoken language. It is proposed to give this test to a much wider range of children coming to a speech clinic in Edinburgh to assess their intelligence and, after they have been at school two years, to see whether their achievement in learning to read and spell is defective, as was the case in children suffering from "pure" retardation of speech development.

METHODS

Tests; analysis

RESULTS

Production and standardisation of tests

NUMBER OF WORKERS

One full-time; two part-time

TIME SCHEDULE

Starting date : January 1972

Completion date : January 1975

SOURCE OF FINANCE

Scottish Education Department

PROJECT

An evaluation of subject choice

RESEARCH ORGANISATION/INSTITUTE

University of Edinburgh, Department of Educational Sciences, Edinburgh EH8 9YL

PRINCIPAL RESEARCHER

A. F. MacPherson

AIM

The project will review existing primary and secondary information on subject choice and its implications. Recommendations will be made both on the improvement of existing information collection and dissemination, and on such new work as should be undertaken.

METHODS

Analysis

RESULTS

A review and analysis of existing literature and data on pupil and student subject preferences in the light of the so-called "swing from science" in the 1960s.

NUMBER OF WORKERS

Two researchers; one other assistant

TIME SCHEDULE

Starting date : July 1971

Completion date : October 1974

SOURCE OF FINANCE

Scottish Education Department

PROJECT

The move - Certificate of Education (Higher Grade) to higher education

RESEARCH ORGANISATION/INSTITUTE

University of Edinburgh, Department of Educational Sciences, Edinburgh EH8 9YL

PRINCIPAL RESEARCHER

A. F. McPherson

AIM

This is an extension of the "After Higher Grade" research to include "After Ordinary Grade". The career pattern of leavers with Ordinary Grade qualifications will relate to variables similar to those used in the 1970 "After Higher Grade" research. Particular attention will be paid to factors influencing:

- pupils not to remain at school until the Higher Grade of the Certificate of Education, and
- recruitment to the health service occupations and nursing.

METHODS

Data collection; data processing; analysis

NUMBER OF WORKERS

One researcher; one secretary

TIME SCHEDULE

Starting date : 1 October 1972

Completion date : September 1974

SOURCE OF FINANCE

Scottish Education Department

PROJECT

Entry to higher education

RESEARCH ORGANISATION/INSTITUTE

University of Edinburgh, Department of Educational Sciences, Edinburgh EH8 9YL

PRINCIPAL RESEARCHER

A. F. McPherson

AIM

The project will investigate three main areas:

- the number of qualified school-leavers who enter degree-giving courses; which qualified leavers do not enter the institution or course of their choice and why;

- the continuities and discontinuities in teaching/learning methods between the final year at school and the first year at university, and between the first year at university and subsequent years at university;

- the extent to which the individual student is satisfied with and has been changed by his first year at university, and an evaluation of these factors in terms of a broader notion of liberal education for the individual.

METHODS

Data collection; analysis

NUMBER OF WORKERS

One researcher

TIME SCHEDULE

Starting date : July 1972

Completion date : October 1975

SOURCE OF FINANCE

Scottish Education Department

PROJECT

Individual differences and computer-assisted instruction (CAI)

RESEARCH ORGANISATION/INSTITUTE

University of Edinburgh, School of Artificial Intelligence, Bionics Research Laboratory, Edinburgh EH8 9YL

PRINCIPAL RESEARCHER

Dr. J.A.M. Howe

BIBLIOGRAPHIC REFERENCES

Delamont, Sara and Howe, J.A.M.: Edinburgh computer-assisted instruction project: attitudes to computer-assisted instruction. Bionics Research Reports No. 4, 1971.

Delamont, Sara: Individual differences and CAI: a research review. Memorandum CAI-8. Bionics Research Laboratory. 1972.

AIM

To undertake studies of the individual characteristics of pupils
It is our view that any adaptive computer teaching system which attempts to model the pupil, must encompass such factors as aptitude, interest, study habits and so on as well as the pupil's existing knowledge.

METHODS

Questionnaires; tests; surveys of the literature

RESULTS

The findings so far have been concerned with pupils' attitudes to the teacher, to the subject and to the use of the computer as a teaching agent. The implications are that to be effective computerised teaching programmes must be much more learner centred and open-ended. Our evidence for support of our view that a programme must take account of a pupil's motivation, interest, work style, etc. is speculative at present, because we cannot yet write teaching programmes which can behave appropriately. However, the work of our laboratory is generally concerned with the problems inherent in the task of writing computer programmes which behave intelligently.

NUMBER OF WORKERS

Two

TIME SCHEDULE

Starting date : August 1971

Completion date : July 1973

SOURCE OF FINANCE

Scottish Council for Research in Education
Facilities provided by the University of Edinburgh

PROJECT

Computerised methods for teaching arithmetic and elementary mathematics to primary school children

RESEARCH ORGANISATION/INSTITUTE

University of Edinburgh, School of Artificial Intelligence, Bionics Research Laboratory, Edinburgh EH8 9YL

PRINCIPAL RESEARCHER

Dr. J.A.M. Howe

BIBLIOGRAPHIC REFERENCES

Cassels, Frances and Howe, J.A.M.: Edinburgh computer-assisted instruction project: errors in arithmetic. Bionics Research Reports No. 5, 1971

AIM

To investigate new computerised methods of teaching arithmetic to primary school children since existing models, such as the Stanford University drill-and-practice routines, are not effective teaching tools. Our work involves the construction of a computer programme which can model the process of building up and using a cognitive structure of the facts, concepts and procedures required for problem solving in arithmetic. In this sense, it is within the area of research into artificial intelligence.

METHODS

Methods and techniques of artificial intelligence

RESULTS

This being a long-term research project, we cannot offer findings at the present time. However, even limited success could have important implications for teaching techniques.

NUMBER OF WORKERS

Three

TIME SCHEDULE

The present contract began on 1 January 1972 and terminates on 31 March 1973. It is not possible to estimate the completion date since the work is long-term. Much depends upon the availability of further support, and also upon the availability of staff with a high degree of expertise in artificial intelligence techniques.

SOURCE OF FINANCE

Scottish Council for Research in Education
Facilities provided by the University of Edinburgh

PROJECT

Research on interaction analysis

RESEARCH ORGANISATION/INSTITUTE

Callender Park College of Education, Falkirk, Stirlingshire

PRINCIPAL RESEARCHER

E. Reid

AIM

Interaction analysis is a technique developed to describe teaching in terms of verbal interaction between teacher and pupils. The aim of the project is :

- to produce instructional materials for interaction analysis and microteaching;
- to develop and evaluate microteaching;
- to develop and evaluate interaction analysis as a common language in teacher preparation situations.

METHODS

Questionnaires; analysis

NUMBER OF WORKERS

One researcher; two other assistants

TIME SCHEDULE

Starting date : 1972

Completion date : 1975

SOURCE OF FINANCE

Scottish Education Department

PROJECT

A socio-linguistic study of the immigrant school pupil in Glasgow

RESEARCH ORGANISATION/INSTITUTE

Jordanhill College of Education, Jordanhill, Glasgow W3

PRINCIPAL RESEARCHER

L. Dickinson

AIM

- To provide socio-cultural information of relevance to education planning about the local immigrant pupil;
- To clarify the relationship between effective measurement of ability and assessment of school subject performance with a view to guiding syllabus reform, and
- To clarify the relationship between variables in English language teaching situations and gains in English language made by learners.

METHODS

Tests for ability and subject assessment; analysis

NUMBER OF WORKERS

One research sociologist; one research psychologist; one part-time secretary

TIME SCHEDULE

Starting date : October 1970

Completion date : October 1973

SOURCE OF FINANCE

Scottish Education Department

PROJECT

Programmed learning for mentally and physically handicapped children

RESEARCH ORGANISATION/INSTITUTE

Jordanhill College of Education, Jordanhill, Glasgow W3

PRINCIPAL RESEARCHER

H.P.R. Hodge

AIM

The project is concerned with the setting up of a pilot study to be run in the Glasgow area to assess the potential value of programmed learning. The aims are to evaluate the effectiveness of programmed materials for teaching children suffering from a variety of mental and physical handicaps at the secondary school level; to assess the relative effectiveness of different methods of presenting programmes for different types of handicap; to examine the attitudes of children with specific handicaps to the use of programmes and equipment.

METHODS

Examination and testing of children; evaluation of materials

RESULTS

Developmental materials in reading and mathematics have a beneficial effect but need to be related to a resource centre.

NUMBER OF WORKERS

One research assistant; one other assistant; twenty teachers

TIME SCHEDULE

Starting date : January 1970

Completion date : January 1973

SOURCE OF FINANCE

Scottish Education Department

PROJECT

An assessment of the alternative syllabus in chemistry as a method of teaching

RESEARCH ORGANISATION/INSTITUTE

University of Glasgow, Department of Chemistry, Glasgow W2

PRINCIPAL RESEARCHER

Professor D.W.A. Sharp

AIM

To examine the suitability and applicability of the newer methods of teaching science, particularly chemistry, by evaluating:

- the new syllabuses, their content and method of examination;
- the impact of the new alternative syllabus and of the Sixth Form Certificate of Studies in chemistry;
- how the universities should adapt teaching methods to be suitable for pupils who have followed the alternative syllabus.

METHODS

Questionnaires; statistical analysis

NUMBER OF WORKERS

One researcher; one other assistant

TIME SCHEDULE

Starting date : April 1969

Completion date : August 1972

SOURCE OF FINANCE

Scottish Education Department

PROJECT

A study of testing and teaching covering the cognitive and affective domains in science

RESEARCH ORGANISATION/INSTITUTE

University of Glasgow, Department of Chemistry, Glasgow W2

PRINCIPAL RESEARCHER

Professor D.W.A. Sharp

AIM

To assess objective testing, project scoring and examinations at secondary and tertiary level, and to construct instruments for the assessment of objectives in the affective domain. A maturity study will also be conducted into the ability of pupils to correlate material.

METHODS

Testing, constructing instruments

NUMBER OF WORKERS

One researcher; two and a half other assistants

TIME SCHEDULE

Starting date : October 1971

Completion date : April 1975

SOURCE OF FINANCE

Scottish Education Department

PROJECT

An assessment of how far programmed audio-visual packages in science can help to reinforce the work of teachers in the smaller secondary schools of the Highlands and Islands of Scotland

RESEARCH ORGANISATION/INSTITUTE

University of Glasgow, Department of Education, Glasgow W2

PRINCIPAL RESEARCHER

M. Roebuck

AIM

To produce instructional units and evaluate their effectiveness and acceptability in the small isolated secondary schools with limited staff and with some pupils leaving after following the common course to the age of 14

METHODS

Production and evaluation of course materials and experiments

RESULTS

Carefully prepared materials can be used effectively by non-specialist staff in general science.

NUMBER OF WORKERS

Two

TIME SCHEDULE

Starting date : October 1970

Completion date : October 197[illegible]

SOURCE OF FINANCE

Scottish Education Department

PROJECT

The organisation of the school day, week and year

RESEARCH ORGANISATION/INSTITUTE

University of Glasgow, Department of Social and Economic Research, Glasgow W2

PRINCIPAL RESEARCHER

Dr. C. E. Cumming

AIM

- To establish what variations exist in the more tangible areas of the organisation of secondary schools;
- To ascertain what informed opinion in schools has to say on the merits/demerits of the present system and alternative systems which have been put forward.

METHODS

School visits; data collection by means of questionnaires

RESULTS

A four-term year is possible and is desired by a large majority of people.

NUMBER OF WORKERS

One researcher within a unit

TIME SCHEDULE

Starting date : October 1971

Completion date : October 1973

SOURCE OF FINANCE

Scottish Education Department

PROJECT

Continuation of the "Further Education Resources Project"

RESEARCH ORGANISATION/INSTITUTE

University of Glasgow, Management of Education Unit, Glasgow W2

PRINCIPAL RESEARCHER

Dr. C. E. Cumming

AIM

To organise full-time and part-time courses in further education as regards the most effective use of staff, buildings, student time and finance

METHODS

Data collection; analysis

RESULTS

Substantive results have been produced, and uncharted territory has been explored to lay a basis for the flow of information useful for management purposes.

NUMBER OF WORKERS

One researcher with a unit

TIME SCHEDULE

Starting date : December 1969

Completion date : September 1972

SOURCE OF FINANCE

Scottish Education Department

PROJECT

School timetabling by computer (Phase III)

RESEARCH ORGANISATION/INSTITUTE

University of Strathclyde, Department of Operational Research, George Street, Glasgow C1

PRINCIPAL RESEARCHER

N. L. Lawrie

AIM

A development of existing programs is planned as well as general studies of some aspects of school organisation, the timetabling process and the problems of using any computer code for timetabling.

METHODS

Study of schools in order to find their pattern of organisation and resource use

RESULTS

Computer timetabling is feasible using an appropriate system, but it may require constraints unacceptable to teachers.

NUMBER OF WORKERS

Two

TIME SCHEDULE

Starting date : April 1971

Completion date : March 1973

SOURCE OF FINANCE

Scottish Education Department

PROJECT

Analysis of factors influencing initial progress in reading

RESEARCH ORGANISATION/INSTITUTE

University of Strathclyde, Department of Psychology, George Street, Glasgow C1

PRINCIPAL RESEARCHER

Dr. M. M. Clark

BIBLIOGRAPHIC REFERENCES

Clark, M.M. : Reading difficulties in schools. Harmondsworth, Penguin 1970

AIM

To continue the investigation carried out on specific reading disability over the past three years.

It is proposed to compare the amount of overall backwardness in reading with those pupils in the west of Scotland who have severe reading difficulties, and with those who start school as fluent readers.

METHODS

Data collection; comparison

RESULTS

Close analysis of individual cases using a complete age group in early primary school will, almost without exception, produce a specific reason for failure in reading.

NUMBER OF WORKERS

One researcher; one part-time assistant

TIME SCHEDULE

Starting date : September 1969

Completion date : October 1971

SOURCE OF FINANCE

Scottish Education Department

PROJECT

Environment and attainment of primary school children

RESEARCH ORGANISATION/INSTITUTE

University of Strathclyde, Department of Sociology, George Street, Glasgow C1

PRINCIPAL RESEARCHER

J. S. Struthers

AIM

To study social environmental factors in relation to the development of the child's cognitive capacities, attitudes and aspirations, by an intensive examination of a selected group of children. Attainment has been treated as dependent on two general sets of factors, both of which are affected by the home environment:

- general intellectual capacity
- attitude to school and school work.

METHODS

Approximately 200 ten-year-old children from three schools with controlled characteristics which draw children from a wide range of social backgrounds have been given a battery of three types of test - intelligence tests, attainment tests and scales assessing attitudes towards aspects of the school.

The home environment has been investigated by a combination of questionnaire and semi-structured interview.

RESULTS

Analysis is still in progress, but it has emerged that the specific factors which are good predictors of school attainment vary considerably between social class groups.

TIME SCHEDULE

The project is partially completed.

SOURCE OF FINANCE

Scottish Council for Research in Education

PROJECT

Evaluation of the achievement of the affective objectives laid down in Curriculum Paper 7 for all pupils in the first two years of secondary education in Scotland

RESEARCH ORGANISATION/INSTITUTE

University of Stirling, Department of Education, Stirling

PRINCIPAL RESEARCHER

S. A. Brown (Mrs.)

AIM

Attitude assessments of approximately 3,000 pupils in Scottish secondary schools will be made at the start of the first year and at the end of the second year of secondary education. Variations in attitude will be investigated in relation to a number of other variables such as: type of science course, teacher attitudes, sex, pupil convergency/divergency scores, school size and education authority area.

METHOD

Questionnaires; analysis

NUMBER OF WORKERS

One researcher; part-time technical and clerical staff

TIME SCHEDULE

Starting date : January 1971

Completion date : January 1974

SOURCE OF FINANCE

Scottish Education Department

PROJECT

Sociological factors associated with irregular school attendance among secondary school children

RESEARCH ORGANISATION/INSTITUTE

University of Stirling, Sociology Department, Stirling

PRINCIPAL RESEARCHER

Dr. Sheila Mitchell

BIBLIOGRAPHIC REFERENCES

Mitchell, Sheila: The absentees' education in the north 1972; (reprinted as an appendix to the Annual Report of the Scottish Council for Research in Education 1972).

AIM

To examine the extent to which certain social and personal characteristics of pupils were associated with the duration of absence from school and the reason for such absence (i.e., it is attempted to differentiate medical from non-medical causes).

METHODS

Analysis of school records; questionnaires to teachers and pupils; interviews with selected pupils after they had left school.

Absence data was collected concerning 3,600 children attending seven secondary schools of differing type. Personal and social data was sought from approximately half these children (working on a basis of matched classes) and 1,503 completed questionnaires obtained. Follow-up studies concerned smaller groups selected on the basis of type and duration of absence.

RESULTS

Poor attenders were more likely than other children to have fathers who were in semi-skilled or unskilled occupations. They were also likely to come from large families, and this was particularly marked in the case of boys whose frequent absences appeared to occur for non-medical reasons. The poor attenders also showed less affiliation to schoolmates, choosing their leisure time companions from neighbours who attended other schools (or who had left school), whereas the good attenders tended to mix socially with schoolmates.

Answers to the questionnaire showed that absence was associated with two constellations of attitudes:

- the view that school was an imposition to be evaded as soon as possible;

- a self-perception of academic inferiority.

Poor attenders also showed a lower level of occupational aspiration, and again this was particularly marked in the case of boys frequently absent for non-medical reasons.

Interviews with matched groups of poor and good attenders who had passed the minimum school leaving age showed that, as might be expected, the good attenders were more likely to have continued their education on a voluntary basis. Among those who had started work, the poor attenders seemed to have had more difficulty in settling. They changed their job more frequently and were more likely to experience unemployment.

NUMBER OF WORKERS

One researcher; one research assistant (1968-69); two part-time clerical assistants

TIME SCHEDULE

Starting date : 1968

Completion date : 1973

SOURCE OF FINANCE

Scottish Council for Research in Education

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